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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements relating to Sliding Window Assemblies

We, PERCY LANE LIMITED, a British Company of Planet Works, Lichfield Road, Tamworth, in the County of Staffordshire, do hereby declare the invention for which we pray that a Patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:—

This invention relates to sliding window assemblies of the kind comprising a frame affording two side-by-side channels to receive a stationary window panel and a sliding window panel and said frame being adapted to fit in an opening in a body of, for example, a road vehicle and which body may be the body proper or a door hinged to the body proper, and to be retained in the opening by co-operation with a peripheral body flange extending inwardly towards the opening and lying in a plane parallel or substantially parallel with the plane of the opening.

The peripheral edges of the sliding window panel are usually slidably supported in a felt or similar sealing strip of U-shaped cross-sectional shape located in the appropriate channel in the frame and said frame is secured to the flange of the opening by a metal cored U-shaped trim strip and/or by U-shaped metal clips or other securing means separate from the said sealing strip, such an assembly being shown in Patent No. 965,287.

It is an object of the present invention to provide improvements in the sealing strip and the securing means.

According to the present invention a combined sealing strip and securing means for a sliding window assembly of the kind specified comprises a strip made of rubber or like resilient material and of substantially S-shape in cross-section to afford two side-by-side but oppositely directed channels, one of said channels, a sliding panel channel being adapted to be located in a channel in the frame of the sliding window assembly and being adapted to receive the sliding window panel, said sliding

panel channel having as a permanent part thereof a lining of a material which will afford only a small frictional resistance to the sliding of the window panel along the channel, the other said channel, a body flange channel, being adapted to receive the peripheral body flange and the adjacent wall of a channel in the frame to retain or assist in retaining the frame in the body.

Preferably the said lining is formed of nylon flock and this is conveniently adhesively secured to the resilient material.

The body flange channel preferably converges towards its open side in an unstressed state of the strip so that the walls of the body flange channel grip the peripheral body flange and said adjacent wall resiliently when engaged therewith.

The invention also provides a sliding window assembly of the kind specified, wherein the sliding panel channel of a combined sealing strip and securing means as above defined according to the present invention is located in a channel in the frame.

The invention further provides a structure comprising a body formed with an opening having a peripheral body flange and a sliding window assembly as above defined according to the present invention wherein the body flange channel of a combined sealing strip and securing means receives the body flange and the adjacent wall of an inner channel in the frame to retain or assist in retaining the frame in the body.

If desired the adjacent wall of the inner channel of the frame may be provided with holes to receive securing screws which pass through the peripheral body flange to assist in securing the frame to the body said body flange channel enclosing and concealing the screws and the peripheral flange and/or alternatively metal U-shaped clips may be applied over the peripheral body flange and the adjacent wall of the inner channel of the frame to assist in securing the frame to the body,

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said body flange channel enclosing and concealing the clips.

An embodiment of the invention will now be described in detail with reference to the accompanying drawings in which:—

Figure 1 is a fragmentary sectional view of a sliding window assembly taken perpendicular to the plane of the assembly and having a combined sealing strip and securing means;

Figure 2 is a perspective view of a portion of combined sealing strip and securing means;

Figure 3 is a sectional view similar to Figure 1 but of a further form of sliding window assembly; and

Figure 4 is a sectional view similar to Figure 1 but of a still further form of sliding window assembly.

Referring now to the drawings, the sliding window assembly indicated generally at 1 is intended to be fitted to an opening 2 in the body of a road vehicle and this body may be the body proper or may be a door hinged to the body proper. In either case the combination of the sliding window assembly and the body to which the assembly is fitted forms the structure herein referred to. The body is composed of two body panels, an outer body panel 3 and an inner body panel 4, the inner panel being substantially flat and the panel 3 being of dished-formation to provide a peripheral flange 5 which is placed in face-to-face contact with a peripheral edge portion 6 of the panel 4 so that the edges of the two panels are level and these two flanges provide a peripheral body flange 5, 6 which extends around the opening in the body and which opening is intended to receive the sliding window assembly. The panel 3 also affords a shoulder 7 disposed transversely of the peripheral body flange and extending outwardly therefrom and affords a main part 8 and which extends substantially parallel with and spaced from the panel 4. The two flanges 5 and 6 which together form the peripheral body flange around the opening 2 are conveniently secured together by spot-welding or in any other convenient manner.

The sliding window assembly comprises a frame 9 which extends around the top, bottom and two sides of the assembly and for convenience of description a bottom rail of the frame and associated parts of the body and window panel will be described.

The frame 9 of the sliding window assembly is conveniently made of extruded aluminium bar and is of substantially W-shape in cross-section affording two side-by-side channels 10 and 11 which are, however, of rectangular shape in cross-section and are open at their upper sides. The two channels are formed by a horizontal base or web 12 from which extends vertically upwardly an outer wall 13, an inner wall 14 and an intermediate wall 15 to provide an outer channel 11 to receive a stationary window panel 16 and an inner channel 10 to receive a sliding window panel 17 and

the channel 10 is slightly wider than the channel 11. The assembly is fitted into the body opening so that the inner wall 14 lies against an outer face of the body flange 5, 6.

In the channel 11 there is located a sealing strip 32 made of rubber and of U-shaped cross-sectional shape to receive the peripheral edge of the stationary window panel 16.

In the channel 10 of the frame there is located part of a combined sealing strip and securing means 18 made of rubber or like resilient material and being of substantially S-shape in cross-section although the S-formation is disposed on its side instead of being upright. The strip 18 thus affords two side-by-side channels of which one, a sliding panel channel 19, is located in the channel 10 with the open side of the channel 19 disposed upwardly, and the other of which channels, a body flange channel 20, is applied over the peripheral body flange 5, 6 to receive said body flange and the adjacent inner wall 14.

The strip 18 thus affords in the position in which it is mounted in the frame an outer vertical wall 21, an inner vertical wall 22 and an intermediate vertical wall 23. The walls 21 and 23 are connected together at their lower ends by a horizontal web 24 and the walls 22 and 23 are connected together at their upper ends by a horizontal web 25 and thus the wall 23 forms a common wall of the sliding panel channel 19 and the body flange channel 20.

The channel 19 is secured in position in the channel 10 of the frame by a small lip 26 formed at the upper end of the wall 15 and the lip 26 overlies an upper edge of the outer wall 21 of the channel 19.

When the strip 18 is in an unstressed state and not applied to the assembly, as shown in Figure 2, channel 20 converges downwardly towards its open side and channel 19 diverges upwardly towards its open side so that when the channel 20 is applied to the peripheral body flange 5, 6 and the adjacent wall 14 of the frame, the walls 22 and 23 of the channel 20 exert a gripping pressure on the body flange 5, 6 and the wall 14 to hold the flange and wall together to retain the strip 18 in position and the channel 19 is located in the channel 10 and the walls 21 and 23 exert a gripping pressure on the walls 14 and 15.

The three faces of the sliding panel channel 19 i.e. the faces afforded by the walls 21 and 23 and the web 24 are faced or lined with a material which will afford only a small frictional resistance to the sliding of the window panel 17 along the channel so that the panel may be slid along the channel fairly easily when required but will resist accidental sliding.

It is found in practice that the lining or facing material having the required properties is provided by a nylon flock material 27 which is conveniently sprayed onto the faces of the channel and is adhesively secured thereto and

this operation may be performed by first coating the faces with an adhesive and then spraying the nylon flock into this adhesive coating to form an anti-frictional lining or facing material.

It should be appreciated that the sliding window assembly described with reference to Figure 1 is retained in position in the opening solely by the engagement of the channel 20 with the flange 5, 6 and the wall 14.

In the assembly shown in Figure 3 which is generally similar to that shown in Figure 1 the sliding window assembly 1 is further retained in the opening 2 by inverted U-shaped metal clips 28 which are applied downwardly over the flanges 5 and 6 and the wall 14 together in face-to-face contact. In this case the channel 20 receives the clip 28 as well as the flanges 5 and 6 and the wall 14.

In the assembly shown in Figure 4, which is again generally similar to that shown in Figure 1 the flanges 5 and 6 and the wall 14 are held together by a screw 29 received in aligned bores in the flanges 5 and 6 and a screw-threaded bore in the wall 14. The channel 20 in this case encloses the screw 29, the wall 14 and flanges 5 and 6.

When the sliding window assembly is in position in the body opening a wedge shaped space is formed between the web 12 of the frame and the downwardly and outwardly inclined shoulder 7 of the body panel 3 and into this space is fitted a weather sealing strip 30 of sponge rubber and this weather sealing strip is retained in position by means of a rib 31 which extends longitudinally of the frame and downwardly for a short distance and is disposed below the outer channel of the frame.

The invention thus provides a combined sealing strip and securing means which is capable of performing both functions of slidably supporting the sliding panel and securing the frame to the body and furthermore said strip also forms a trim strip which conceals the edge of the peripheral body flange.

The invention also provides an improved sliding window assembly of the kind specified and an improved structure comprising the combination of such an assembly and a vehicle body, which structure is easier and quicker and hence less expensive to assemble than hitherto.

WHAT WE CLAIM IS:—

1. A combined sealing strip and securing means for a sliding window assembly of the kind specified comprising a strip made of rubber or like resilient material, of substantially S-shape in cross-section and affording two side-by-side but oppositely directed channels, one of said channels, a sliding panel channel, being adapted to be located in a channel in the frame of the sliding window assembly and being adapted to receive the sliding window panel, said sliding panel channel having as a permanent part thereof a lining of a material

which will afford only a small frictional resistance to the sliding of the window panel, the other said channel, a body flange channel, being adapted to receive the peripheral body flange and the adjacent wall of a channel in the frame to retain or assist in retaining the frame in the body.

2. A combined sealing strip and securing means as claimed in Claim 1 in which said lining comprises nylon flock adhesively secured to the resilient material.

3. A combined sealing strip and securing means as claimed in Claim 1 or Claim 2 in which the body flange channel converges towards its open side in an unstressed state of the strip so that the walls of the body flange channel grip the peripheral body flange and said adjacent wall resiliently when engaged herewith.

4. A combined sealing strip and securing means as claimed in any preceding claim in which the side walls of said sliding panel channel in an unstressed state of the strip diverge towards the open side of said sliding panel channel so that when the sliding panel channel is inserted in a channel in the frame the strip is deformed and the said side walls exert a gripping pressure on the side walls of the channel in the frame.

5. A sliding window assembly of the kind specified wherein the sliding panel channel of a combined sealing strip and securing means as claimed in any preceding claim is located in a channel in the frame.

6. A structure comprising a body formed with an opening having a peripheral body flange and a sliding window assembly as claimed in Claim 5 wherein the body flange channel of the strip receives the body flange and the adjacent wall of an inner channel in the frame to retain or assist in retaining the frame in the body.

7. A structure as claimed in Claim 6 in which said adjacent wall of said inner channel of the frame is provided with holes to receive securing screws which pass through the peripheral body flange to assist in securing the frame to the body, said body flange channel enclosing and concealing the screws and the peripheral flange.

8. A structure as claimed in Claim 6 or Claim 7 in which metal U-shaped clips are applied over the peripheral body flange and the adjacent wall of the inner channel of the frame to assist in securing the frame to the body, said body flange channel enclosing and concealing the clips.

9. A combined sealing strip and securing means substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

10. A sliding window assembly substantially as hereinbefore described with reference to and as shown in Figures 1, 3 or 4 of the accompanying drawings.

11. A structure substantially as hereinbefore described and as shown in Figures 1, 3 or 4 of the accompanying drawings.

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Fig. 1.

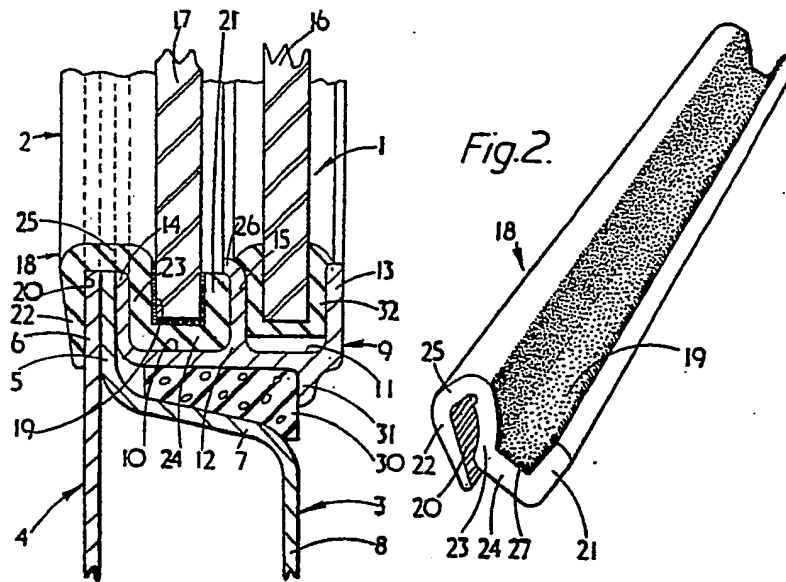


Fig. 2.

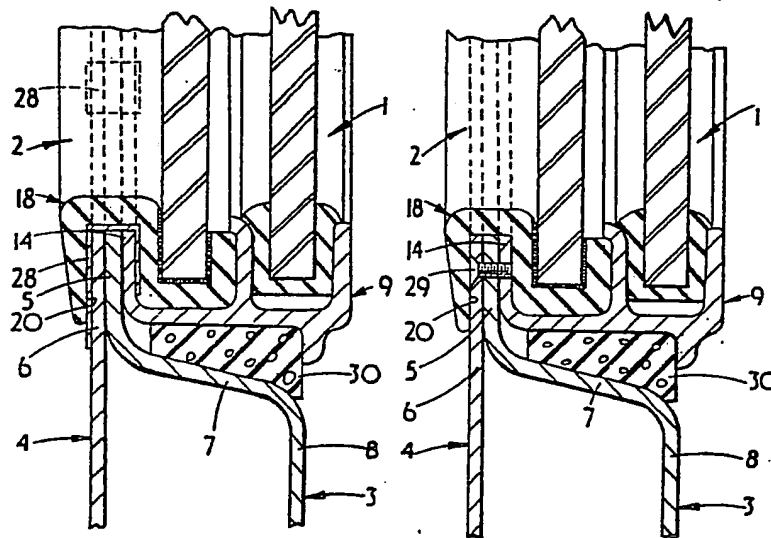
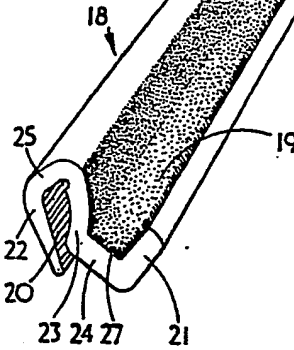


Fig. 3.

Fig. 4.

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